

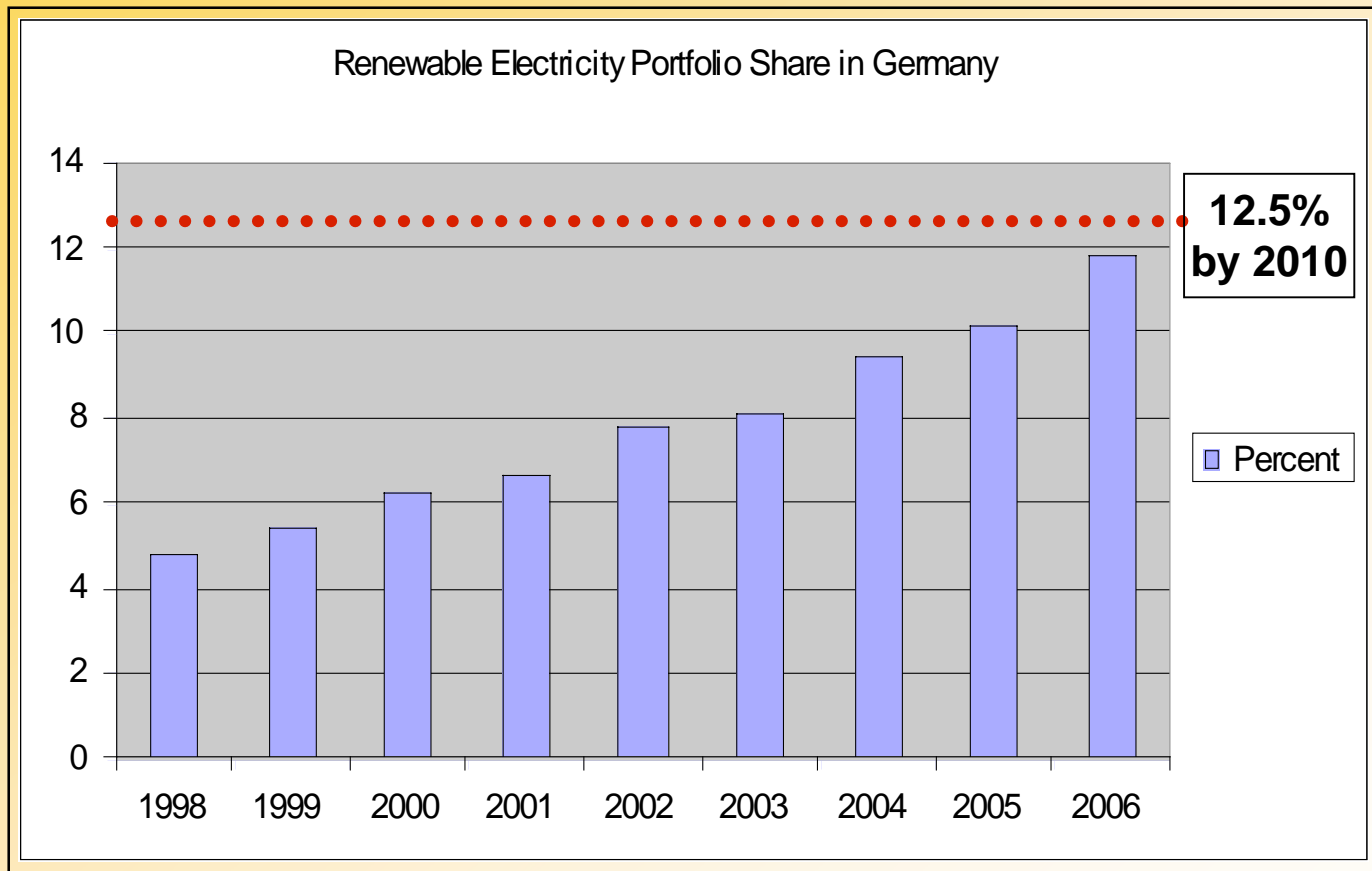
What Can California Learn from European Feed-In Tariffs?

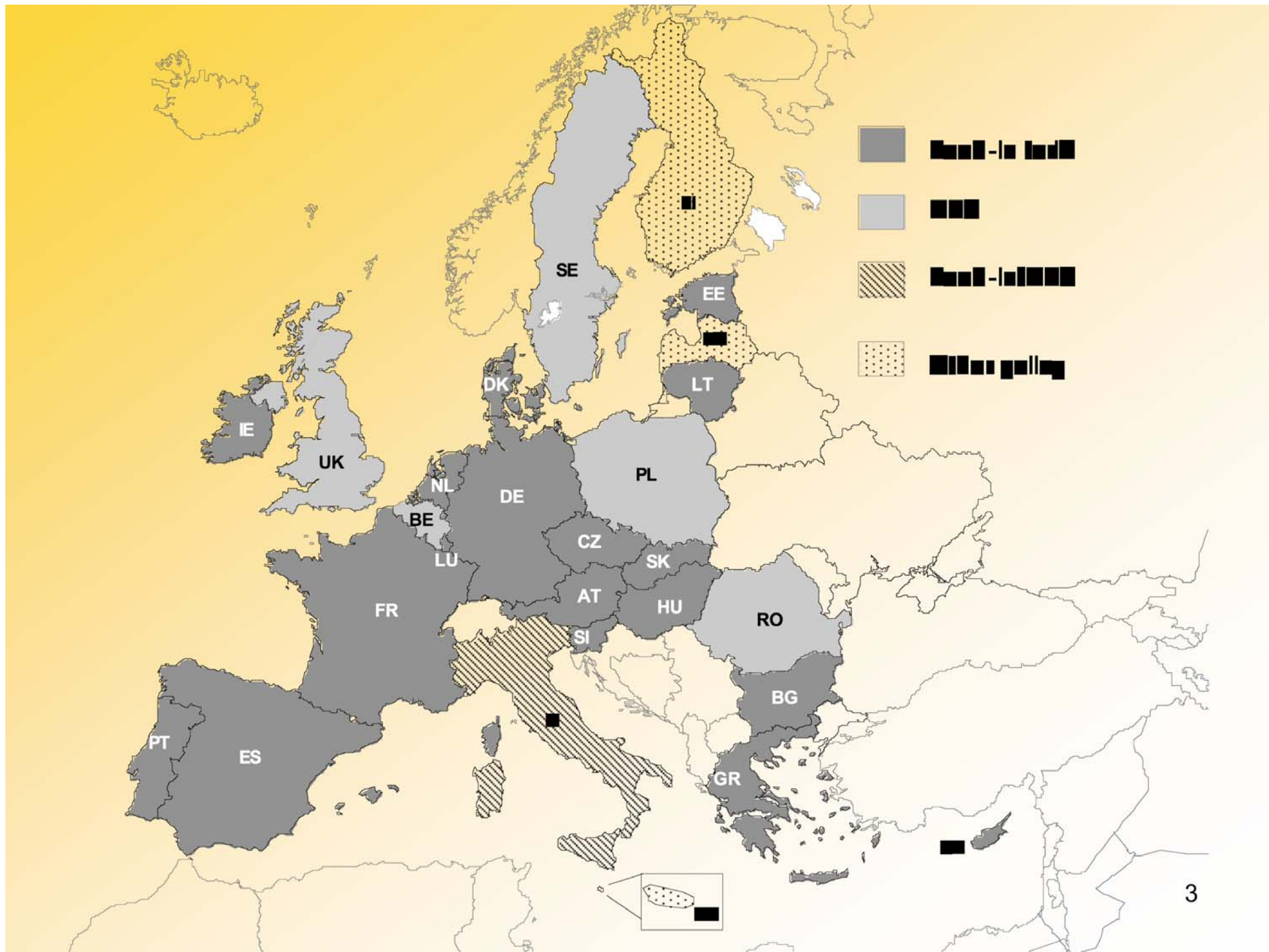
California Energy Commission Feed-in Tariffs for Renewable Energy Workshop



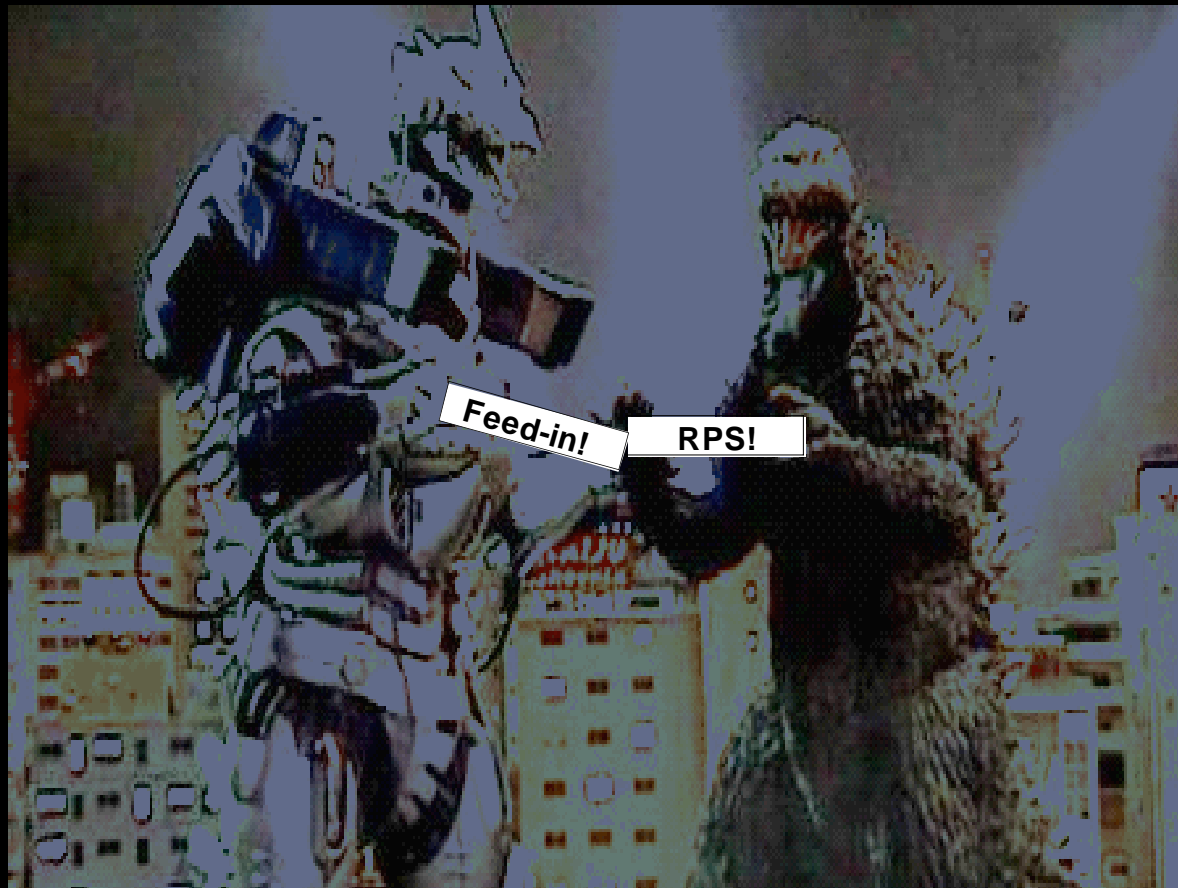
Source: IEA PV-PS

**Wilson Rickerson
May 21st. 2007**





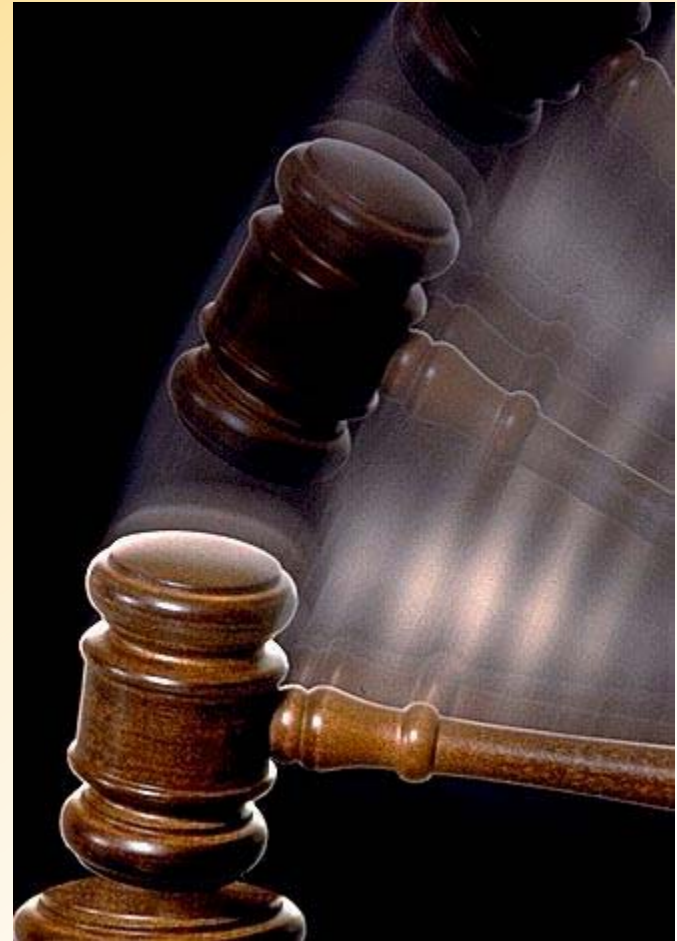
THE EUROPEAN DEBATE



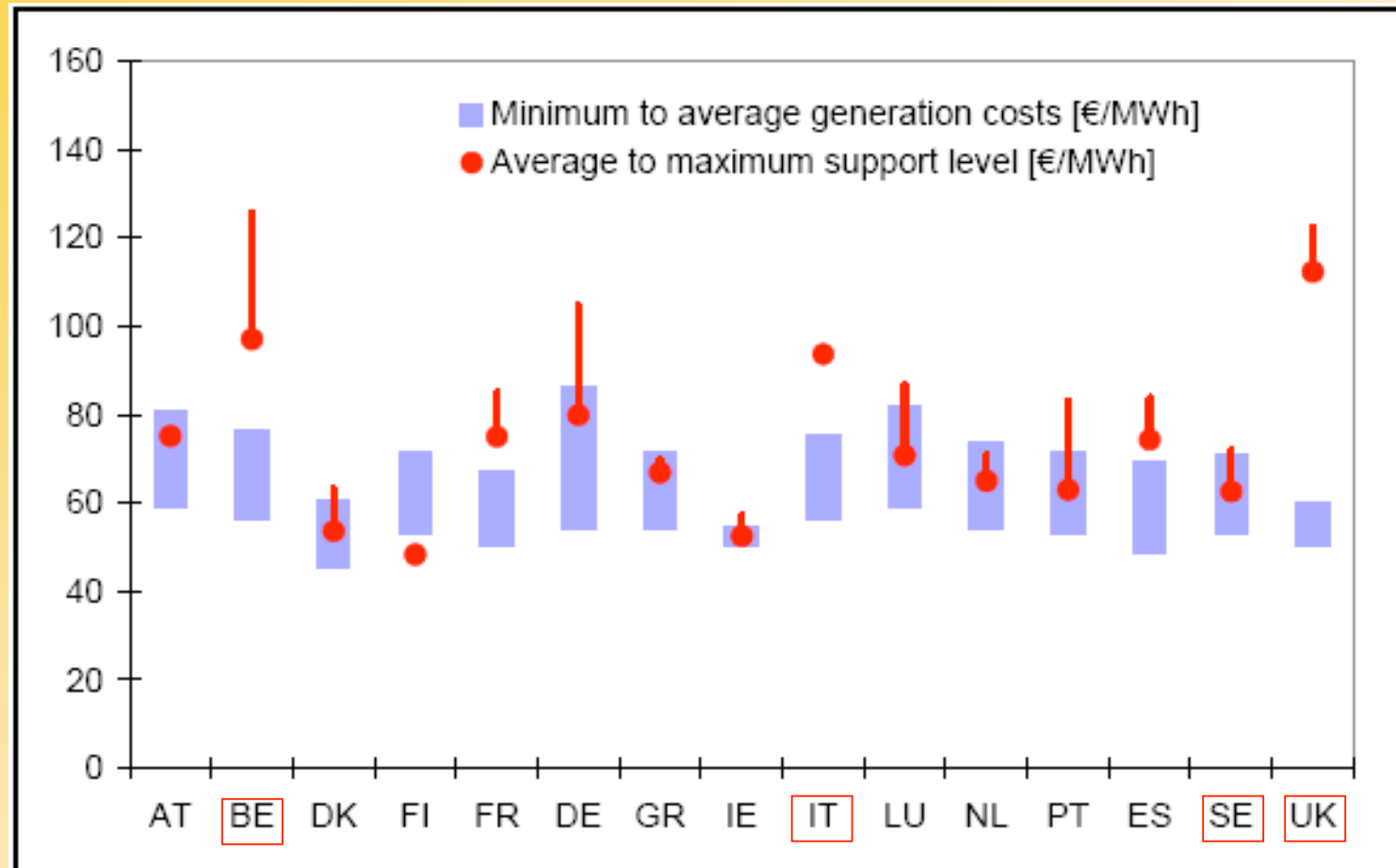
Harmonization or Bust

The Arguments for Feed-in Tariffs

- Investor confidence
- Rapid deployment
- Transparent procurement and payments
- Lower administrative costs
- Supports emerging technologies and reduces long-term costs
- Shifts competition to equipment market
- Encourages technological innovation
- Encourages geographic distribution
- Manufacturing and jobs
- Projected costs minimal



Commission of the European Communities (2006)



Wind Generation Cost vs. Policy Incentive Levels

The reason for higher costs “can be found in the higher risk premium requested by investors, the administrative costs and the still immature green certificate market.”

European Commission (2005)

Feed-ins “achieve larger deployment at lower costs.”

Nicholas Stern

Stern Review on the Economics of Climate Change

Former Chief Economist for the World Bank

So What does this Mean for the U.S.?

- Similar conclusions cannot be generally applied to US experience with RPS
- The inherent superiority of a certain policy type is difficult to establish
- In both US and Europe, policy design, regulatory framework, market context, electrical infrastructure, and renewable resources drive results







California:

No need to battle

- **European anti-RPS arguments not relevant**
 - **No pressure for harmonization**
 - **No short-term REC markets**
 - **PV supported under CSI (eventually)**
- **European experience with feed-in tariffs could provide models**



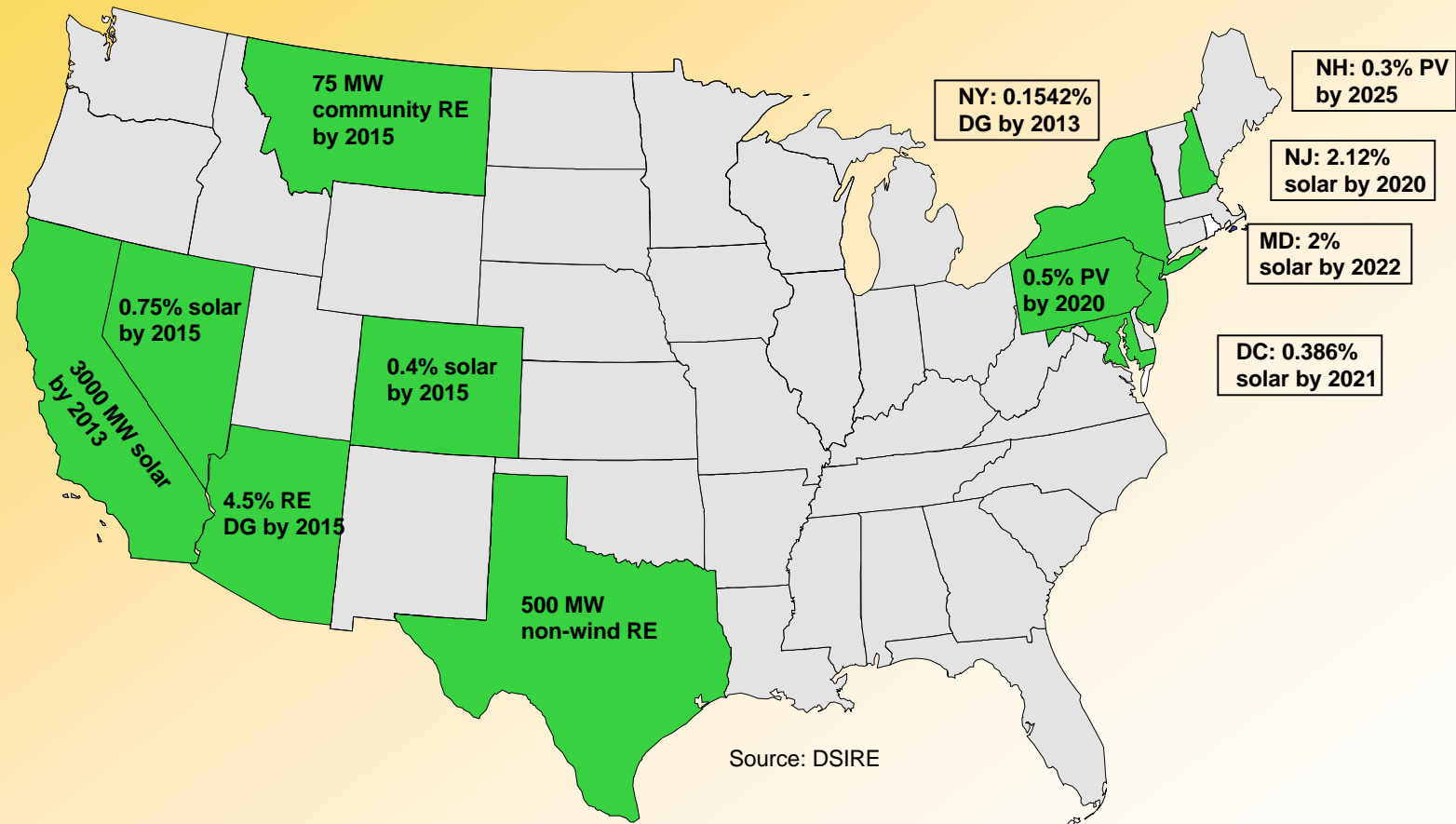
How Can Feed-in Tariffs Help?

	Could a feed-in help?
RPS not at a pace to reach 2010/2020 goals	
Investor uncertainty regarding SEP/MPR	
Lack of transparency and simplicity in contracting process, least cost/best fit, etc.	
MPR based on uncertain natural gas forecasts and not representative of RE value	
Inadequate consideration of contract failure	
Repowering	?
Transmission constraints	

Ghosts of PURPA?

- RE technology prices and energy prices have changed
- Premium prices for RE \neq policy failure
- Long-term contracts could be a portfolio hedge against natural gas volatility, carbon regulation, and electricity price increases
- European best practices: feed-in tariffs can be structured to decline, levels reviewed every two years target only certain resources, etc.
- Interest in feed-in tariffs among CA policy community
 - CSI > 100 kW PV
 - SCE standard offer RPS contract
 - Proposed WWTP standard offer (399.20)

DG carve-outs?



Utility-scale and beyond

Bilateral contracts in regulated states

Long-term REC contracts

Long-term contracts-for-differences

Price floors

The ElectraNet

National feed-in tariff



Tennessee Valley Infrastructure Group Inc.

Feed-in tariffs under Consideration

Hawaii

SB 1223 would create a solar feed-in tariff for the state on top of net metering

Massachusetts

The state is actively exploring a solar feed-in tariff

New Jersey

Feed-in tariffs reviewed as option and hybrid tariff/SREC market proposed for solar RPS

New York State

Standard offer contracts approved for approved for future consideration but not currently in use

Oregon

Wind working group workshop focused on feed in tariffs in 2006

Wisconsin

RENEW Wisconsin working with state stakeholders to develop feed-in tariff for DG



Source: Robb Williamson (NREL-PIX 10280)

Conclusions

- Many of the current arguments against feed-in tariffs have played out already in Europe over the past 15 years
- Feed-in tariffs and RPS do not have to be at odds
- California is well-positioned to consider feed-in tariffs:
 - Ambitious GHG, solar, and RE targets
 - Record of innovative policymaking and policymaker interest in feed-ins
 - Long-term bilateral contracts already in place as building block
 - History of standard offers and willingness to consider fixed price incentives
- Critical design considerations
 - Price setting and flexibility mechanisms
 - Resources targeted
 - Policy interaction
 - Cost control options



Source: Geri Kodey (NREL-PIX 14387)

QUESTIONS?



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